

Virgilio Cocianni
Remediation Manager

Schlumberger Oilfield Service
121 Industrial Boulevard
Sugar Land, TX 77478
Tel: 281-285-4747
cocianni-v@slb.com

July 13, 2012

VIA FedEx Overnight

Section Chief
Environmental Enforcement Section
U.S. Department of Justice
PO Box 7611
Washington, DC 20044-7611

Craig Zeller
Remedial Project Manager
Superfund Division
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

Re: DOJ Case No. 90-11-2-696/1

Subject: Second Quarter 2012 Progress Report
Sangamo Weston/Twelvemile Creek/Lake Hartwell Superfund Site
Natural Resources Trustees Consent Decree

Dear Section Chief:

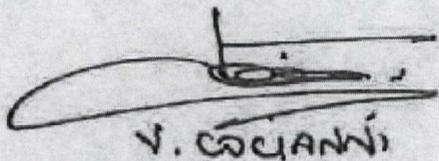
In accordance with the Consent Decree and Section XIV of the Unilateral Administrative Order for the above referenced site, Schlumberger is required to submit Progress Reports on a quarterly basis.

In keeping with Paragraph 20 of the Consent Decree:

I certify that the information contained in or accompanying this submission is true, accurate and complete. This certification is based on my personal preparation, review, or analysis of the submission, and/or supervision of persons who, acting on my instructions, made the verification that the submitted information is true, accurate and complete.

If you have any questions, please do not hesitate to contact me at (281) 285-3692.

Sincerely,



V. COCIANNI

Virgilio Cocianni
Remediation Manager



10979065

U.S. EPA REGION IV

SDMS

POOR LEGIBILITY

PORTIONS OF THIS DOCUMENT MAY BE
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cc: Honorable G. Ross Anderson, Jr.
G. Ross Anderson, Jr. Federal Building
and United States Courthouse
315 South McDuffie Street, 2nd Floor
Anderson, SC 29624

Honorable William W. Wilkins
Nexsen Pruet
55 E. Camperdown Way
Suite 400
Greenville SC 29601

Leon C. Harmon Esq.
Nexsen Pruet
55 E. Camperdown Way
Suite 400
Greenville SC 29601

John Cresswell
Assistant Director
Division of Site Assessment and Remediation
Bureau of Land & Waste Management
SC Department of Health and
Environmental Control
2600 Bull Street
Columbia, SC 29201

Regional Solicitor's Office
U.S. Department of the Interior
Attn: Harriet M. Deal
75 Spring Street, SW Room 304
Atlanta, GA 30303

Diane Beeman
Ecological Services Office
U.S. Fish and Wildlife Service
176 Croghan Spur Road, Suite 200
Charleston, SC 29407

Paul League
SC Department of Natural Resources
Office of Chief Counsel
1000 Assembly Street
Columbia, SC 29202

Anthony Rabern
Georgia Department of Natural Resources
3695 Highway 197
Clarksville, GA 30523

Office of the Attorney General
Timothy J. Ritzka
Assistant Attorney General
40 Capitol Square SW
Atlanta, GA 30334

Jamie Sykes
Richard B. Russell Project Office
4144 Russell Dam Drive
Elberton, GA 30635

Frank S. Holleman III
Wyche Burgess Freeman & Parham, P.A.
44 East Camperdown Way
Greenville SC 29601-3591

Mr. Lance Ketcham
ARCADIS
6723 Towpath Road
Syracuse, NY 13214-0066

Mr. Ronald Cardwell
McNair Law Firm, P.A.
Post Office Box 447
Greenville, SC 29602

Ms. Celeste T. Jones
McNair Law Firm, P.A.
Post Office Box 11390
Columbia, SC 29211

**Second Quarter 2012 Progress Report
Sangamo Weston/Twelvemile Creek/Lake Hartwell Superfund Site
Operable Unit 2**

Reporting Period: April 1 through June 30, 2012

Activities Initiated/Completed

- During the month of April, the water treatment plant was taken offline and dismantled. A new simplified water treatment system, which was approved by SCDHEC, was installed.
- Continued operation of the water treatment system proportional to the sump water levels.
- SCDHEC Solid Waste Management Regional personnel were onsite on April 25 and May 21 for a general visit/inspection and to perform a Class Three Landfill Inspection in accordance with Regulation 61-107.19, Part V. The completed Inspection Forms are provided as Attachment 1. Minor issues related to vegetation and stabilization were noted during these inspections; vegetation continues to develop on site. A general visit/inspection was also performed in June; however, the completed inspection form was not available at the time of this report.
- Completed installation of fencing around SMU.
- Certain restoration construction activities were completed, including planting of 3,500 live stakes and removal of some fallen trees along Twelvemile Creek. Bank stabilization at two locations (at approximately Station 30+00 and 42+00), as agreed with the Trustee Council, was initiated. Additional details are provided in the Second Quarter Restoration Progress Report.

Results of Sampling, Tests, and Other Data

- Sampling and analysis is being conducted relative to the WTS effluent water. Results for the effluent water fell within the applicable relevant ranges and are attached (Attachment 2).
- Site photographs are included as Attachment 3.

Plans, Reports, and other Deliverables

- Analytical data related to samples collected from the WTS to assess water treatment effluent water were submitted to SCDHEC monthly. Copies of the reports submitted on April 27, May 25, and June 8 are provided in Attachment 2.
- A completed Notice of Termination (NOT) form for industrial stormwater discharges associated with the Twelvemile Creek Restoration Project Sediment

Management Unit (SMU) was submitted to Pickens County and SCDHEC on May 22.

- The SMU Documentation Report was submitted to SCDHEC on May 11.
- The technical memo titled, "Twelvemile Creek Bank Stabilization – Live Stake Planting and Other Ongoing Stream Activities" was submitted to [the Special Receiver and the Trustee Council on May 15.
- The 60% Design for the Twelvemile Creek Bank Stabilization Project was submitted to the Special Receiver and the Trustee Council on June 11.

Work Planned for Third Quarter 2012

- Submit the Second Quarter Restoration Progress Report.
- Submit the Final Restoration Plan.

Issues Encountered, Anticipated Delays, Solutions

- None noted



Attachment 1



Class Three Landfill Inspection Form
Regulation 61-107.19, Part V

Facility Name: 12 MILE SMU Date/Time of Inspection: 4-25-12 1345
County: Pickens Permit #:
Reason for Inspection: X Routine; Follow-up; Complaint; Other
Current Weather Conditions: Clear

Previous 24-hours: Rain Y (circle) - If yes, amount inches; High winds Y N

1 - Meets or exceeds regulatory requirements; 2A - Improvement needed (minor issues exist; corrective measures recommended); 2B - Improvement needed (moderate issues exist; corrective action required and scheduled); 3 - Unacceptable (serious issues and/or recurring issues with minimal or no corrective action taken - alleged regulatory or permit condition violations have occurred - enforcement referral required); Y - Yes; Meets or exceeds regulatory requirements; N - No; Corrective measures recommended that should be fixed by the next inspection or an agreed upon completion date; NA - Not applicable; NI - Not inspected

Procedures for Excluding Receipt of Unapproved Waste (258.20)

- 1. NA Overall effectiveness of Special Waste Analysis and Implementation Plan (SWAIP)
2. Y N NA NI Trained waste screener present
3. Y N NA NI Random daily load inspections conducted and documented
4. Y N NA NI Records of unacceptable waste maintained
5. Y N NA NI Personnel training program on recognition of regulated hazardous waste and PCB waste
6. Y N NA NI Record of Notification to Department within 72-hours of hazardous or PCB waste receipt
7. Y N NA NI Unauthorized wastes removed from working face by the end of the operating day

Cover Material Requirements (258.21)

- 8. NA >= 6" soil (short-term cover)
9. NA Alternate Daily Cover (ADC)
10. X 2A >= 6" soil (long-term and/or intermediate cover)
11. Y N NA NI Adequate soil quantity available for cover

Control of (258.21, 22, 24, 25 and 37):

- 12. Blowing litter
13. Off-site odors
14. Disease vectors
15. Fires/Open burning
16. Scavenging

Access Requirements (258.25)

- 17. Condition of access controls
18. Condition of all weather roads - entrance
19. Condition of all weather - internal haul roads

Run-on/Run-off Controls (258.26)

- 20. Condition of ditches/swales
21. Condition of berms/terraces/downchutes
22. Condition of sedimentation ponds

Leachate Seeps (258.26 and 27)

- 23. Leachate seep management

Liquid Restrictions (258.28)

- 24. NA Free of unauthorized bulk or non-containerized liquids

Record Keeping Requirements (258.29)

- 25. Y N NA NI Required records are maintained in the landfill's operating record

Scale Requirements (258.30)

- 26. Y N NA NI Scales installed and functioning properly

Required Equipment to Operate Landfill (258.31)

- 27. NI NA NI Required equipment operational - if not please provide details in comments as to the type of equipment down for repairs, impact to operations, and status on temporary replacement equipment

Certified Landfill Manager/Supervisor (258.32)

- 28. Y N NA NI Manager and supervisor certified by SCDHEC
29. NI NA NI Certified manager or supervisor on-site

Leachate Collection System (258.33 and 34)

- 30. Y N NA NI Leachate handling agreement in place
31. Leachate collection system management
32. NI Leachate recirculation system management
33. Y N NA NI Required leachate recirculation reports/data contained in the landfill's operating record
34. Leachate seep management
35. Leachate collection system management

Testing of Municipal Solid Waste (MSW) Incinerator Ash (258.35)

- 36. Y N NA NI MSW incinerator ash management

Sign Requirements (258.36)

- 37. NI NA NI Required signs posted

Condition of Monitoring Wells (258.51)

- 38. NI Monitoring well maintenance program

Working Face/Elevation (258.87)

- 39. Y N NA NI Method of elevation control with benchmark

Plans and Permit (Permit)

- 40. Y N NA NI Operating in accordance with approved plans and general permit
41. Y N NA NI Permitted engineering drawings available
42. Y N NA NI Permitted operational plan available
43. Y N NA NI Permitted stabilization/landscaping plan available
44. Y N NA NI Permitted contingency plan available
45. Y N NA NI Permitted approved groundwater-monitoring plan available
46. Y N NA NI Permitted closure plan available
47. Y N NA NI Permitted post-closure plan available

Name of those present during the inspection:

Comments:

Table with 3 columns: Inspection Item, Corrective action required, Date to be completed. Row 1: 1D, areas where vegetation have been seeded on well of 4-25-12 several areas throughout landfill need work on stabilization.

Additional comment page: Y N

Photos taken: NI

The signature below certifies that the SCDHEC inspector has personally checked each item and has answered according to the true condition existing at the time of inspection.

Signature of Facility Representative

Signature of SCDHEC Inspector



Class Three Landfill Inspection Form
Regulation 61-107.19, Part V

Facility Name: 12 mi. S.M.V. Date/Time of Inspection: 5-21-12 1:35
County: Pickens Permit #:
Reason for Inspection: Routine Follow-up Complaint Other
Current Weather Conditions: Clear, warm
Previous 24-hours: Rain: Y (N) If yes, amount: inches; High winds: Y (N)

1 - Meets or exceeds regulatory requirements; 2A - Improvement needed (minor issues exist; corrective measures recommended); 2B - Improvement needed (moderate issues exist; corrective action required and scheduled); 3 - Unacceptable (serious issues and/or recurring issues with minimal or no corrective action taken - alleged regulatory or permit condition violations have occurred - enforcement referral required); Y - Yes; Meets or exceeds regulatory requirements; N - No; Corrective measures recommended that should be fixed by the next inspection or an agreed upon completion date; NA - Not applicable; NI - Not inspected

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- 1. Overall effectiveness of Special Waste Analysis and Implementation Plan (SWAIP)
2. Trained waste screener present
3. Random daily load inspections conducted and documented
4. Records of unacceptable waste maintained
5. Personnel training program on recognition of regulated hazardous waste and PCB waste
6. Record of Notification to Department within 72-hours of hazardous or PCB waste receipt
7. Unauthorized wastes removed from working face by the end of the operating day

Cover Material Requirements (258.21)

- 8. Alternate Daily Cover (ADC)
9. Adequate soil quantity available for cover
10. Adequate soil quantity available for cover
11. Adequate soil quantity available for cover

Control of (258.21, 22, 24, 25 and 37):

- 12. Blowing litter
13. Off-site odors
14. Disease vectors
15. Fires/Open burning
16. Scavenging

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- 17. Condition of access controls
18. Condition of all weather roads - entrance
19. Condition of all weather - internal haul roads

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- 20. Condition of ditches/swales
21. Condition of berms/terraces/downchutes
22. Condition of sedimentation ponds

Leachate Seeps (258.26 and 27)

- 23. Leachate seep management

Liquid Restrictions (258.28)

- 24. Free of unauthorized bulk or non-containerized liquids

Record Keeping Requirements (258.29)

- 25. Required records are maintained in the landfill's operating record

Scale Requirements (258.30)

- 26. Scales installed and functioning properly
27. Required equipment operational - if not please provide details in comments as to the type of equipment down for repairs, impact to operations, and status on temporary replacement equipment

Certified Landfill Manager/Supervisor (258.32)

- 28. Manager and supervisor certified by SCDHEC
29. Certified manager or supervisor on-site

Leachate Collection System (258.33 and 34)

- 30. Leachate handling agreement in place
31. Leachate collection system management
32. Leachate recirculation system management
33. Required leachate recirculation reports/data contained in the landfill's operating record

Leachate Recirculation System (258 Subpart I and Permit)

- 34. Leachate seep management

Leachate collection system management

Testing of Municipal Solid Waste (MSW) Incinerator Ash (258.35)

- 36. MSW incinerator ash management

Sign Requirements (258.36)

- 37. Required signs posted

Condition of Monitoring Wells (258.51)

- 38. Monitoring well maintenance program

Working Face/Elevation (258.67)

- 39. Method of elevation control with benchmark

Plans and Permit (Permit)

- 40. Operating in accordance with approved plans and general permit
41. Permitted engineering drawings available
42. Permitted operational plan available
43. Permitted stabilization/landscaping plan available
44. Permitted contingency plan available
45. Permitted approved groundwater monitoring plan available
46. Permitted closure plan available
47. Permitted post-closure plan available

Name of those present during the inspection:

Comments:

Table with 3 columns: Inspection Item, Corrective action required, Date to be completed. Includes handwritten entries for items 10 and 35.

Additional comment page: Y (N) Photos taken: Y (N)
The signature below certifies that the SCDHEC Inspector has personally checked each item and has answered according to the true condition existing at the time of inspection.

Facility Representative: [Signature] SCDHEC Inspector: [Signature]



Attachment 2



Mr. Dale Stoudemire, Manager
South Carolina Department of Health and Environmental Control
Bureau of Water/Water Pollution Control Division
Data Management Section
2600 Bull Street
Columbia, South Carolina 29201

Subject:

Schlumberger Technology Corporation, Twelvemile Creek Restoration Project
Pickens County, South Carolina
March 2012 Sampling Results Report

Dear Mr. Stoudemire:

On behalf of Schlumberger Technology Corporation (STC), ARCADIS is providing a summary of sampling results for the Twelvemile Creek Restoration Project in Pickens County for the month of March 2012 in accordance with the August 16, 2011 letter from Jeffrey P. deBessonnet of South Carolina Department of Health and Environmental Control (SCDHEC), and the January 20, 2012 SCDHEC construction and operation approval memorandum. The January 20, 2012 SCDHEC construction and operation approval memorandum approved the reduced water treatment system onsite operating at an estimated average discharge rate of 216,000 gallons per day.

Table 1 contains the water treatment plant flow for the month of March. This data is recorded onsite and is reviewed by a South Carolina certified water treatment plant operator. The maximum daily discharge to Twelvemile Creek for March 2012 was 20,800 gallons on March 14th. The average discharge to Twelvemile Creek from the water treatment plant over the month of March was approximately 2,100 gallons per day.

Table 2 contains the results of the analyses described in Table 1 of the August 16, 2011 letter that were performed on the water treatment plant effluent during the month of March 2012. The Laboratory Services Report from Rogers & Callcott Laboratory Services related to these tests is provided in Attachment A. The samples were analyzed for pH, temperature, total suspended solids and PCBs. Results were within the ranges outlined in the August 16, 2011 letter for the listed parameters.

Table 3 summarizes the results of the acute whole effluent toxicity (WET) testing received from Rogers & Callcott Laboratory Services. The result from the March

Imagine the result

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse
New York 13214-0066
Tel 315.446.9120
Fax 315.449.0017
www.arcadis-us.com

ENVIRONMENTAL

Date:
April 27, 2012

Contact:
Lance S. Ketcham

Phone:
315.671.9163

Email:
lance.ketcham@arcadis-us.com

Our ref:
MT001019

ARCADIS

Mr. Dale Stoudemire
April 27, 2012

2012 acute WET testing was within the range of the August 16, 2011 letter. The Laboratory Services Report for the WET testing is provided in Attachment B.

If you have any questions on the above, please feel free to contact me.

Sincerely,

ARCADIS



Lance S. Ketcham
Principal Engineer

LSK/amm

Copies:

Melinda Vickers, SCDHEC
Eric Kim, SCDHEC
Virgilio Cocianni, STC (e-copy)

ARCADIS

Tables

Table 1. Daily Flow from Water Treatment Plant for March 2012. Twelvemile Creek Restoration Project, Pickens County

Date	Flow, gal/day
Monthly Avg ¹	MR
Daily Max ¹	MR
3/1/2012	0
3/2/2012	0
3/3/2012	0
3/4/2012	0
3/5/2012	0
3/6/2012	0
3/7/2012	0
3/8/2012	0
3/9/2012	0
3/10/2012	0
3/11/2012	0
3/12/2012	8,800
3/13/2012	9,700
3/14/2012	20,800
3/15/2012	8,700
3/16/2012	16,500
3/17/2012	0
3/18/2012	0
3/19/2012	0
3/20/2012	0
3/21/2012	0
3/22/2012	0
3/23/2012	0
3/24/2012	0
3/25/2012	0
3/26/2012	0
3/27/2012	0
3/28/2012	0
3/29/2012	0
3/30/2012	0
3/31/2012	0
Total Discharge to Twelvemile Creek	64,500
Days per Month	31
Average Discharge (approximate)	2,100

Notes:

- The flow rates shown are recorded by a South Carolina certified wastewater treatment plant operator in the water treatment plant flow log maintained onsite. A flow rate of 0 gal/day is shown in this table when no flow is recorded in the flow log for that day.
- On 7/24/2011, three of the six process trains (trains D, E, and F) were taken offline and the meters removed. On 8/3/11, train A was taken offline. On 11/15/11, train B was taken offline.
- Bolded value is the maximum daily discharge recorded.

Superscript Notes:

¹ Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (SCDHEC) to Chris Moody (ARCADIS) as revised in the 8/18/2011 letter from Jeffrey deBessonnet (DHEC) to Lance Ketcham (ARCADIS).

Acronyms and Abbreviations:

- Avg - average
- gal/day - gallons per day
- Max - maximum
- MR - monitor and report

Table 2. Weekly Effluent Sampling Result for March 2012, Twelve Mile Creek Restoration Project, Pickens County

Sample Number	Location	Sample Type	Week	Sample Date and Time	pH	Temp. (°C)	TSS (mg/L)	PCB (µg/L)						
								PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Monthly Avg. ¹	--	--	--	--	6.0 to 8.5	--	25	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Daily Max. ¹	--	--	--	--	6.0 to 8.5	--	45	0.5	0.5	0.5	0.5	0.5	0.5	0.5
--	WTP Effluent Discharge	--	1	--	--	--	--	No Discharge						
2030326-01	WTP Effluent Discharge	G	2	3/13/2012 09:30	6.2	16.8	NA	NA	NA	NA	NA	NA	NA	NA
2030326-02	WTP Effluent Discharge	G		3/13/2012 09:30	NA	NA	3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
--	WTP Effluent Discharge	--	3	--	--	--	--	No Discharge						
--	WTP Effluent Discharge	--	4	--	--	--	--	No Discharge						
--	WTP Effluent Discharge	--	5	--	--	--	--	No Discharge						
Average					6.2	16.8	3.4	-	-	-	-	-	-	-

Notes:

1: The monthly average includes non-detect readings as indicated by "<" (if applicable) and assumes a value equal to the detection limit. Monthly averages are not calculated for parameters without a detected concentration (indicated by "--").

Superscript Note:

¹ Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (SCDHEC) to Chris Moody (ARCADIS) as revised in the 8/16/2011 letter from Jeffrey deBeaumont (DHEC) to Lance Ketcham (ARCADIS).

Acronyms and Abbreviations:

- °C - degrees centigrade
- G - grab sample
- µg/L - micrograms per liter
- mg/L - milligrams per liter
- NA - not analyzed
- PCB - polychlorinated biphenyl
- Temp. - temperature

Table 3. Whole Effluent Toxicity Result for March 2012. Twelvemile Creek Restoration Project, Pickens County

WET Analysis	Monthly Average¹	Daily Maximum¹	Sample Date	Result
<i>Ceriodaphnia dubia</i> Acute WET @ ATC=35.5%	-	0 ²	3/13/2012	0

Notes:

1. A grab sample (2030302-01) for acute WET testing was collected on 3/13/2012 as required by the 8/16/2011 letter.

Superscript Notes:

- ¹ Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (SCDHEC) to Chris Moody (ARCADIS) as revised in the 8/16/2011 letter from Jeffrey deBessonnet (DHEC) to Lance Ketcham (ARCADIS).
- ² A result of "0" indicates a passing result.

Acronyms and Abbreviations:

WET - whole effluent toxicity

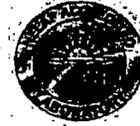
ARCADIS

Attachments

ARCADIS

Attachment A

**Laboratory Services Report:
August 16, 2011 Table 1 Analyses**



Laboratory Services Report

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cocianni
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2030326
Received: 03/13/2012 12:45

Dear Vic Cocianni:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on March 13, 2012. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Amy Ashley, your Project Manager, at amy.ashley@rogersandcallcott.com or (864)-335-4962 if you have any questions about this report.

Report Approved By:

Amy Ashley
Project Manager

This report may not be reproduced, except in full, without written permission from Rogers & Callcott, Inc.

426 Fairforest Way, Greenville SC 29607 - PO Box 5655, Greenville SC 29606

Phone 864-232-1556 Fax 864-232-6140

www.rogersandcallcott.com



Laboratory Services Report

South Carolina Laboratory Identification 23105
South Carolina Mobile Lab Identification 40572
North Carolina Laboratory Certification Number 27
NELAP Laboratory Identification E87822

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cocianni
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2030326
Received: 03/13/2012 12:45

Sample Number	Sample Description	Matrix	Sampled	Type
2030326-01	Water Treatment Plant Effluent Discharge Grab	Wastewater	03/13/12 09:30	Grab
2030326-02	Water Treatment Plant Effluent Discharge Grab	Wastewater	03/13/12 09:30	Grab



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2030326
Reported: 03/21/12 10:57

Sample Data

Field Parameters

Sample Number 2030326-01
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 03/13/12 09:30

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
pH	6.2	0.1	pH Units	1	03/13/12 09:30	SM 4500HB		LRW	B2C0278
Temperature	16.8	0.0	°C	1	03/13/12 09:30	SM 2550B		LRW	B2C0278

General Chemistry Parameters

Sample Number 2030326-02
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 03/13/12 09:30

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Suspended Solids	3.4	2.0	mg/L	2	03/13/12 16:00	SM 2540D		LDS	B2C0274

PCBs

Sample Number 2030326-02
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 03/13/12 09:30

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
PCB-1016	ND	0.50	ug/L	1	03/15/12 15:21	EPA 608		RKH	B2C0317
PCB-1221	ND	0.50	ug/L	1	03/15/12 15:21	EPA 608		RKH	B2C0317
PCB-1232	ND	0.50	ug/L	1	03/15/12 15:21	EPA 608		RKH	B2C0317
PCB-1242	ND	0.50	ug/L	1	03/15/12 15:21	EPA 608		RKH	B2C0317
PCB-1248	ND	0.50	ug/L	1	03/15/12 15:21	EPA 608		RKH	B2C0317
PCB-1254	ND	0.50	ug/L	1	03/15/12 15:21	EPA 608		RKH	B2C0317
PCB-1260	ND	0.50	ug/L	1	03/15/12 15:21	EPA 608		RKH	B2C0317

Surrogates	%REC	%REC Limits	Flag
2,4,5,6-Tetrachloro-m-xylene	95	60-130	
Decachlorobiphenyl	80	30-150	



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2030326
Reported: 03/21/12 10:57

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 608 Extraction EPA 608	B2C0317	2030326-02	03/13/2012 10:45	CGW



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2030326
Reported: 03/21/12 10:57

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

NR Not reported



ROGERS & CALLCOTT LABORATORY SERVICES

P.O. Box 5055, Greenville, SC 29605
Phone (864) 232-1556 Fax (864) 232-6140
Shipping Address: 426 Fairforest Way
Greenville, SC 29607

CHAIN OF CUSTODY RECORD

2030324
PAGE 1 OF 1

Client Name: SULLAM BENGAL

Address: _____

Report To: _____

Telephone No: _____ FAX No: _____

PO No: _____ Project No: TAIC

Rogers & Callcott Lab. No.	Date	Time	Sample Description	Total Number of Containers
-02	3/13	0930	WATER TREATMENT PLANT EFF. DISCH.	2

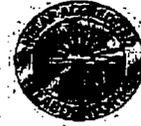
PARAMETERS		N	N					Filtered (Yes/No)
		Y	Y					Cooled (Yes/No)
		P	G					Container Type (P/G)
		Y	Y					Container Volume
		G	G					Sample Type (Grab/Composite)
		WW	WW					Sample Source (WW, GW, DW, Other)
		N	N					Sample Source Chlorinated (Yes/No)
		NA	NEG					Lab Receipt Cl, Check <u>MCV</u>
		NA	7					Lab Receipt pH Check <u>13-13-12</u>
		A	A					Preserved (Code)
							A-None D-NaOH G-Boric Acid B-HNO ₃ E-HCl H-Ascorbic Acid C-H ₂ SO ₄ F-Na ₂ S ₂ O ₅ I-____	
							COMMENTS:	
	TSS	PCB						
	1	1					pH 6.22 GRAB TAKEN Temp 16.8C + READ @ 0930 on 3/13/12 By R/C	

SAMPLER Relinquished by (Sig.) ① <u>[Signature]</u>	Date/Time 3/13/12 1245	Received by (Sig.) ② <u>[Signature]</u>	Date/Time 3.13.12 1245	KNOWN HAZARDS ASSOCIATED WITH SAMPLES
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④	Date/Time	
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥	Date/Time	
Seal # _____ at chd by ⑦	Recvd. Intact by ⑧	Seal # _____ at chd by ⑨	Recvd. Intact by ⑩	Temperature of blank or representative sample At time of collection: _____ °C At time of lab receipt: <u>13</u> °C

ARCADIS

Attachment B

**Laboratory Services Report:
Whole Effluent Toxicity Testing**



Laboratory Services Report

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cocianni
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2030302
Received: 03/13/2012 14:05

Dear Vic Cocianni:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on March 13, 2012. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Amy Ashley, your Project Manager, at amy.ashley@rogersandcallcott.com or (864)-335-4962 if you have any questions about this report.

Report Approved By:

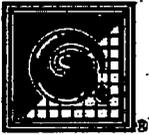
Amy Ashley
Project Manager

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426 Fairforest Way, Greenville SC 29607 - PO Box 5655, Greenville SC 29606

Phone 864-232-1556 Fax 864-232-6140

www.rogersandcallcott.com



Laboratory Services Report

South Carolina Laboratory Identification 23105
South Carolina Mobile Lab Identification 40572
North Carolina Laboratory Certification Number 27
NELAP Laboratory Identification E87822

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cocianni
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2030302
Received: 03/13/2012 14:05

Sample Number	Sample Description	Matrix	Sampled	Type
2030302-01	Water Treatment Plant Effluent Discharge Grab	Wastewater	03/13/12 09:30	Grab



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2030302
Reported: 03/23/12 08:00

Subcontracted Analyses

Sample Number 2030302-01
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 03/13/12 09:30

Parameter

Subcontract Toxicity

These analyses were subcontracted to ETT Environmental. The subcontracted results are available at the end of the report.



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2030302
Reported: 03/23/12 08:00

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
NR Not reported



ROGERS & CALLCOTT LABORATORY SERVICES

P.O. Box 5656, Greenville, SC 29608
 Phone (864) 232-1556 Fax (864) 232-6140
 Shipping Address: 426 Fairforest Way
 Greenville, SC 29607

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Client Name: Rogers & Callcott

Address: _____

Report To: _____

Telephone No. _____ FAX No. _____

PO No. SCHUMBERGER Project No. TULLIE WILE CREEK

Total Number of Containers	N					Filtered (Yes/No)
	Y					Cooled (Yes/No)
	P					Container Type (E/D)
	XL					Container Volume
	G					Sample Type (Grab/Composite)
	NM					Sample Source (WW, GW, DW, Other)
	N					Sample Source Chlorinated (Yes/No)
						Lab Receipt Cl. Check
						Lab Receipt pH Check
	A					Preserved (Code)

Preserved (Code)

A-None	D-NaOH	G-Boric Acid
B-10% H ₂ O ₂	E-HCl	H-Ascorbic Acid
C-H ₂ SO ₄	F-H ₂ S ₂ O ₈	I-_____

COMMENTS:

Rogers & Callcott Lab No.	Date	Time	Sample Description
208-01A	3/13	0930	WATER TREATMENT PLANT #1 ETI Disch.

SAMPLED Relinquished by (Sig.) <i>[Signature]</i>	Date/Time 3/13/14 05	Received by (Sig.) <i>[Signature]</i> Shipper Name & #	Date/Time 3/13/14 05	KNOWN HAZARDS ASSOCIATED WITH SAMPLES * DELIVERED TO ETI LAB
Relinquished by (Sig.) [Signature]	Date/Time	Received by (Sig.) [Signature] Shipper Name & #	Date/Time	
Relinquished by (Sig.) [Signature]	Date/Time	Received by (Sig.) [Signature] Shipper Name & #	Date/Time	
Seal # _____ of chd by _____ Recvd. Intact by _____ Seal # _____ of chd by _____ Recvd. Intact by _____				Temperature of blank or representative sample At time of collection _____ °C At time of lab receipt <u>3.4</u> °C

Ceriodaphnia dubia 48 Hour Acute Pass/Fail Test

EPA-821-R-02-012 Method 2002

Client: SCHLUMBERGER

Facility: EFFLUENT

NPDES #: SC

12 Mile Creek Restoration Project

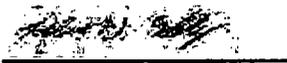
Test Date:

13-Mar-12

Laboratory ID#: T39440

Rogers & Callcott ID#: 2030302-01A

Test Reviewed and Approved By:



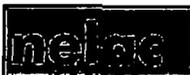
Robert W. Kelley, Ph.D.

QA/QC Officer



Farhad Rostampour

Laboratory Director



Certification #E87819

Test results presented in this report conform to all requirements of

NELAC, conducted under NELAC Certification Number E87819

Florida Dept. of Health. Included results pertain only to provided samples.

SCDHEC Certification #23104

NCDENR Certification # 022



DMR Attachment for Pass/Fail Whole Effluent Toxicity Test Results

TWELVE MILE CREEK RESTORATION PROJE Permit number SC
FINAL LIMITS 04/01/2010- Parameter TGA3B

Discharge number
MLOC=1 CTC= 35.50% effluent

Monitoring period From

Year	Month	Day
12	3	01

To

Year	Month	Day
12	3	31

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date	13-Mar-12	Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID	23104	Control	20	0	Pass			
		Test	20	4				

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Signature of Principal Executive Officer or Authorized Agent _____
 Name/Title of Principal Executive Officer (typed or printed) _____

Control Survival and Reproduction by Test Day

source	rep	1	2	3	4	5	6	7	8	Total
U5 3-2	A		0							0
C1 3-1	A		0							0
B5 3-1	A		0							0
P3 3-1	A		0							0
P1 3-1	A		0							0
RANDOMIZED	B		0							0
	B		0							0
	B		0							0
	B		0							0
	C		0							0
	C		0							0
	C		0							0
	C		0							0
	D		0							0
	D		0							0
	D		0							0
	D		0							0
										Mean
										0.0

Label	T39440
Clean	SCHLUMBERGER
Sample ID	EFFLUENT
NPDES	SC
County	0
Watershed	3
Start & Fed Date	13-Mar-12
Start & Fed Time	1600
Started & Fed By	AE
Test Organism	Ceriodaphnia dubia
Neo. born date	12-Mar-12
Neo. born time	BATCH 2
Test type	SCAPP
Director/Waiter	MHSF
Units for Conc.	%
WC	35.5
% Survival	
Test Volume	30 ml
Test Volume	15 ml
Incubator #	1
Light	16h/8dk
Initial Temp. °C	24.8
Selenastrum	0.05 ml
YAT	0.05 ml
Test Method	EPA 821-R-02-013:1002

35.5 % Effluent Survival and Reproduction by Test Day

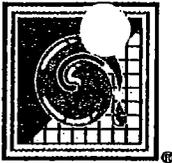
source	rep	1	2	3	4	5	6	7	8	Total
U5 3-2	A		0							0
C1 3-1	A		0							0
B5 3-1	A		D							0
P3 3-1	A		0							0
P1 3-1	A		0							0
RANDOMIZED	B		0							0
	B		0							0
	B		D							0
	B		D							0
	B		0							0
	C		0							0
	C		0							0
	C		0							0
	C		0							0
	D		0							0
	D		0							0
	D		D							0
D		0							0	
D		0							0	
										Mean
										0.0

Comments

Neonates fed at 1330 on 3/13/12

End Date: 15-Mar-12
 Time Fed: 03:26 PM
 Old temp. °C: *****

D=Dead N/A-Lost or not used



ROGERS & CALLCOTT LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29608
Phone (864) 232-1556 Fax (864) 232-8140
Shipping Address: 426 Fairforest Way
Greenville, SC 29607

CHAIN OF CUSTODY RECORD

PAGE 1 of 1

Client Name Rogers + Callcott

Address _____

Report To: _____

Telephone No. _____ FAX No. _____

PO No. SCHUMBERGER TWELVE MILE CREEK
Project No. _____

Rogers & Callcott Lab No.	Date	Time	Sample Description
0302-01A	3/13	0930	WATER TREATMENT PLANT #1 EFF. Disch.

Total Number of Containers	N	Filtered (Yes/No)
	Y	Cooled (Yes/No)
	P	Container Type (P/G)
	GC	Container Volume
	G	Sample Type (Grab/Composite)
	NIN	Sample Source (WW, GW, DW, Other)
	N	Sample Source Chlorinated (Yes/No)
		Lab Receipt Cl. Check
		Lab Receipt pH Check
	A	Preserved (Code)

A-None D-NaOH G-Boric Acid
B-HNO₃ E-HCL H-Ascorbic Acid
C-H₂SO₄ F-NO₂S₂O₈ I- _____

COMMENTS:

203

SAMPLER Relinquished by (Sig.) ① <u>[Signature]</u>	Date/Time 3/13/12 1405	Received by (Sig.) ② <u>[Signature]</u>	Date/Time 3/13/12 1405	KNOWN HAZARDS ASSOCIATED WITH SAMPLES * DELIVERED TO ETT LABS
	Date/Time	Received by (Sig.) ④	Date/Time	
	Date/Time	Received by (Sig.) ⑥	Date/Time	
Seal # _____ at'chd by ○	Recvd. Intact by ○	Seal # _____ at'chd by ○	Recvd. Intact by ○	Temperature of blank or representative sample At time of collection _____ °C At time of lab receipt <u>3.4</u> °C

ETT Log # 39440



Mr. Dale Stoudemire, Manager
South Carolina Department of Health and Environmental Control
Bureau of Water/Water Pollution Control Division
Data Management Section
2600 Bull Street
Columbia, South Carolina 29201

Subject:

Schlumberger Technology Corporation, Twelvemile Creek Restoration Project
Pickens County, South Carolina
April 2012 Water Treatment Plant Sampling Report

Dear Mr. Stoudemire:

On behalf of Schlumberger Technology Corporation (STC), ARCADIS is providing a summary of sampling performed for the Twelvemile Creek Restoration Project in Pickens County for the month of March 2012 in accordance with the August 16, 2011 letter from Jeffrey P. deBessonnet of South Carolina Department of Health and Environmental Control (SCDHEC), and the January 20, 2012 SCDHEC construction and operation approval memorandum.

During the month of April, the water treatment plant was taken offline and dismantled. A new simplified water treatment system, which was approved by SCDHEC, was installed. There was no discharge to Twelvemile Creek in April and, therefore, no effluent samples were collected. Periodic effluent sampling of the new simplified water treatment system is anticipated and will be reported in future reports.

If you have any questions on the above, please feel free to contact me.

Sincerely,

ARCADIS

Lance S. Ketcham
Principal Engineer

LSK/amm

Imagine the result

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse
New York 13214-0066
Tel 315.446.9120
Fax 315.449.0017
www.arcadis-us.com

ENVIRONMENTAL

Date:
May 25, 2012

Contact:
Lance S. Ketcham

Phone:
315.671.9163

Email:
lance.ketcham@arcadis-us.com

Our ref:
MT001019

ARCADIS

Mr. Dale Stoudemire
May 25, 2012

Copies:

Melinda Vickers, SCDHEC

Eric Kim, SCDHEC

Virgilio Cocianni, STC (e-copy)

Page:
2/2



Mr. Dale Stoudemire, Manager
South Carolina Department of Health and Environmental Control
Bureau of Water/Water Pollution Control Division
Data Management Section
2600 Bull Street
Columbia, South Carolina 29201

Subject:

Schlumberger Technology Corporation, Twelvemile Creek Restoration Project
Pickens County, South Carolina
May 2012 Water Treatment System Sampling Report

Dear Mr. Stoudemire:

On behalf of Schlumberger Technology Corporation (STC), ARCADIS is providing a summary of sampling performed for the Twelvemile Creek Restoration Project in Pickens County for the month of May 2012 in accordance with the August 16, 2011 letter from Jeffrey P. deBessonnet of South Carolina Department of Health and Environmental Control (SCDHEC), and the January 20, 2012 SCDHEC construction and operation approval memorandum.

The new simplified water treatment system, which was approved by SCDHEC, began operation on May 15, 2012. Table 1 contains the water treatment system flow for the month of May. This data is recorded onsite and is reviewed by a South Carolina certified water treatment plant operator. The maximum daily discharge to Twelvemile Creek for May 2012 was 51,400 gallons on May 29th. The average discharge to Twelvemile Creek from the water treatment plant over the month of May was approximately 9,400 gallons per day.

Table 2 contains the results of the analyses described in Table 1 of the August 16, 2011 letter that were performed on the water treatment system effluent during the month of May 2012. The Laboratory Services Reports from Rogers & Callcott Laboratory Services related to these tests are provided in Attachment A. The samples were analyzed for pH, temperature, total suspended solids and PCBs. Results were within the ranges outlined in the August 16, 2011 letter for the listed parameters.

Table 3 summarizes the results of the acute whole effluent toxicity (WET) testing received from Rogers & Callcott Laboratory Services. The result from the May 2012

Imagine the result

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse
New York 13214-0066
Tel 315.448.9120
Fax 315.449.0017
www.arcadis-us.com

ENVIRONMENTAL

Date:
June 8, 2012

Contact:
Lance S. Ketcham

Phone:
315.671.9163

Email:
lance.ketcham@arcadis-us.com

Our ref:
MT001019

ARCADIS

Mr. Dale Stoudemire
June 8, 2012

acute WET testing was within the range of the August 16, 2011 letter. The Laboratory Services Report for the WET testing is provided in Attachment B.

If you have any questions on the above, please feel free to contact me.

Sincerely,

ARCADIS



Lance S. Ketcham
Principal Engineer

LSK/amm

Copies:

Melinda Vickers, SCDHEC
Eric Kim, SCDHEC
Virgilio Cocianni, STC (e-copy)

ARCADIS

Tables

Table 1. Daily Flow from Water Treatment Plant for May 2012. Twelvemile Creek Restoration Project, Pickens County

Date	Flow, gal/day
Monthly Avg ¹	MR
Daily Max ¹	MR
5/15/2012	0
5/16/2012	0
5/17/2012	29,000
5/18/2012	0
5/19/2012	0
5/20/2012	0
5/21/2012	0
5/22/2012	42,700
5/23/2012	0
5/24/2012	0
5/25/2012	0
5/26/2012	0
5/27/2012	0
5/28/2012	0
5/29/2012	51,400
5/30/2012	0
5/31/2012	36,400
Total Discharge to Twelvemile Creek	159,500
Days per Month	17
Average Discharge (approximate)	9,400

Notes:

- The flow rates shown are recorded by a South Carolina certified wastewater treatment plant operator in the water treatment plant flow log maintained onsite. A flow rate of 0 gal/day is shown in this table when no flow is recorded in the flow log for that day.
- In April 2012, the onsite wastewater treatment plant used during the construction phase of the project was dismantled and demobilized. The new simplified water treatment system, which was approved by SCDHEC, began operation on May 15, 2012.
- Bolded value is the maximum daily discharge recorded.

Superscript Notes:

¹ Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (SCDHEC) to Chris Moody (ARCADIS) as revised in the 8/16/2011 letter from Jeffrey deBessonnet (SCDHEC) to Lance Ketcham (ARCADIS).

Acronyms and Abbreviations:

Avg - average
gal/day - gallons per day
Max - maximum
MR - monitor and report

Table 2. Weekly Effluent Sampling Result for May 2012, Twelvemile Creek Restoration Project, Pickens County

Sample Number	Location	Sample Type	Week	Sample Date and Time	pH	Temp. (°C)	TSS (mg/L)	PCB (µg/L)						
								PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Monthly Avg.	--	--	--	--	6.0 to 8.5	--	25	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Daily Max.	--	--	--	--	6.0 to 8.5	--	45	0.5	0.5	0.5	0.5	0.5	0.5	0.5
--	WTP Effluent Discharge	--	1	--	No Discharge									
--	WTP Effluent Discharge	--	2	--	No Discharge									
2050561-01	WTP Effluent Discharge	G	3	5/17/2012 09:25	6.5	21.4	NA	NA	NA	NA	NA	NA	NA	NA
2050561-02	WTP Effluent Discharge	G		5/17/2012 09:25	NA	NA	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2050818-01	WTP Effluent Discharge	G	4	5/22/2012 09:00	6.3	21.8	NA	NA	NA	NA	NA	NA	NA	NA
2050818-02	WTP Effluent Discharge	G		5/22/2012 09:00	NA	NA	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2050750-01	WTP Effluent Discharge	G	5	5/29/2012 09:05	6.3	24.4	NA	NA	NA	NA	NA	NA	NA	NA
2050750-02	WTP Effluent Discharge	G		5/29/2012 09:05	NA	NA	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Average					6.4	22.5	-	-	-	-	-	-	-	-

Notes:

1. The monthly average includes non-detect readings as indicated by "<" (if applicable) and assumes a value equal to the detection limit. Monthly averages are not calculated for parameters without a detected concentration (indicated by "--").

Superscript Note:

¹ Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (SCDHEC) to Chris Moody (ARCADIS) as revised in the 8/16/2011 letter from Jeffrey deBessonnet (SCDHEC) to Lance Ketcham (ARCADIS).

Acronyms and Abbreviations:

- °C - degrees centigrade
- G - grab sample
- µg/L - micrograms per liter
- mg/L - milligrams per liter
- NA - not analyzed
- PCB - polychlorinated biphenyl
- Temp. - temperature

Table 3. Whole Effluent Toxicity Result for May 2012. Twelvemile Creek Restoration Project, Pickens County

WET Analysis	Monthly Average¹	Daily Maximum¹	Sample Date	Result
<i>Ceriodaphnia dubia</i> Acute WET @ ATC=35.5%	--	0 ²	5/22/2012	0

Notes:

1. A grab sample (20508601-01) for acute WET testing was collected on 5/22/2012 as required by the 8/18/2011 letter.

Superscript Notes:

- ¹ Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (SCDHEC) to Chris Moody (ARCADIS) as revised in the 8/16/2011 letter from Jeffrey deBessonnet (DHEC) to Lance Ketcham (ARCADIS).
- ² A result of "0" indicates a passing result.

Acronyms and Abbreviations:

WET - whole effluent toxicity

ARCADIS

Attachments

ARCADIS

Attachment A

**Laboratory Services Report:
August 16, 2011 Table 1 Analyses**



Laboratory Services Report

Client	Schlumberger Technology Corp. - Sangamo-TMC Vic Cocianni 205 Industrial Blvd Sugar Land, TX 77478	Project:	Wastewater
		Work Order:	2050561
		Received:	05/17/2012 14:00

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on May 17, 2012. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Amy Ashley, your Project Manager, at amy.ashley@rogersandcallcott.com or (864)-335-4962 if you have any questions about this report.

CC: Cary, Kohler, Ketchum, Maalouf

Report Approved By:

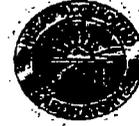
Amy Ashley
Project Manager

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426 Fairforest Way, Greenville SC 29607 - PO Box 5655, Greenville SC 29606

Phone 864-232-1556 Fax 864-232-6140

www.rogersandcallcott.com



Laboratory Services Report

*South Carolina Laboratory Identification 23105
South Carolina Mobile Lab Identification 40572
North Carolina Laboratory Certification Number 27
NELAP Laboratory Identification E87822*

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cocianni
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050561
Received: 05/17/2012 14:00

Sample Number	Sample Description	Matrix	Sampled	Type
2050561-01	Water Treatment Plant Effluent Discharge Grab	Wastewater	05/17/12 09:25	Grab
2050561-02	Water Treatment Plant Effluent Discharge Grab	Wastewater	05/17/12 09:25	Grab



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050561
Reported: 05/23/12 15:56

Sample Data

Sample Number 2050561-01
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 05/17/12 09:25

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Field Parameters									
pH	6.5	0.1	pH Units	1	05/17/12 09:25	SM 4500HB		LRW	B2E0538
Temperature	21.4	0.0	°C	1	05/17/12 09:25	SM 2550B		LRW	B2E0538

Sample Number 2050561-02
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 05/17/12 09:25

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
General Chemistry Parameters									
Total Suspended Solids	ND	2.0	mg/L	2	05/18/12 09:15	SM 2540D		LDS	B2E0541
PCBs									
PCB-1016	ND	0.50	ug/L	1	05/22/12 05:40	EPA 608		RKH	B2E0582
PCB-1221	ND	0.50	ug/L	1	05/22/12 05:40	EPA 608		RKH	B2E0582
PCB-1232	ND	0.50	ug/L	1	05/22/12 05:40	EPA 608		RKH	B2E0582
PCB-1242	ND	0.50	ug/L	1	05/22/12 05:40	EPA 608		RKH	B2E0582
PCB-1248	ND	0.50	ug/L	1	05/22/12 05:40	EPA 608		RKH	B2E0582
PCB-1254	ND	0.50	ug/L	1	05/22/12 05:40	EPA 608		RKH	B2E0582
PCB-1260	ND	0.50	ug/L	1	05/22/12 05:40	EPA 608		RKH	B2E0582
Surrogates									
				%REC	%REC Limits		Flag		
2,4,5,6-Tetrachloro-m-xylene				94	60-130				
Decachlorobiphenyl				100	30-150				



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050561
Reported: 05/23/12 15:56

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 608 Extraction				
EPA 608	B2E0582	2050561-02	05/21/2012 08:45	DBB



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050561
Reported: 05/23/12 15:56

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
NR Not reported



ROGERS & CALLCOTT LABORATORY SERVICES

PO. Box 5655, Greenville, SC 29608
Phone (864) 232-1656 Fax (864) 232-8140
Shipping Address: 428 Fairforest Way
Greenville, SC 29607

CHAIN OF CUSTODY RECORD

20505(2.1)

PAGE 1 OF 1

Client Name Schlumberger

Address _____

Report To: _____

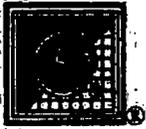
Telephone No: _____ FAX No: _____

PO No: _____ Project No: _____

Rogers & Callcott Lab No.	Date	Time	Sample Description
02	5/17/09	0925	WADAITTMENT PLANT EFF. DISCH.

Total Number of Containers	PARAMETERS	N/N	Filtered (Yes/No)
		P/C	Cooled (Yes/No)
		P/C	Container Type (P/G)
		G/G	Container Volume
		WW/WW	Sample Type (Grab/Composite)
		N/N	Sample Source (WW, GW, DW, Other)
		N/N	Sample Source Chlorinated (Yes/No)
		NA	Lab. Receipt Cl. Check <u>NEU</u>
		NA	Lab. Receipt pH Check <u>5.17</u>
		A A	Preserved (Code)
TSS	A=None B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-HCL F-NO ₂ S ₂ O ₈ G-Boric Acid H-Ascorbic Acid I-		
P.C.B.	COMMENTS		
1	-01		
1	pH 6.5 GRAB TAKEN Temp 21.4d + Lead 9 0925 on 5/17/12 By RLC		

SAMPLER Relinquished by (Sig.) ① <u>Ronald Weil</u>	Date/Time 5/17/12 1400	Received by (Sig.) ② <u>Norma Salley</u>	Date/Time 5-17-12 1400	KNOWN HAZARDS ASSOCIATED WITH SAMPLES		
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④	Date/Time			
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥	Date/Time			
Seal # _____	al'ch'd by ○	Recvd. Intact by ○	Seal # _____	al'ch'd by ○	Recvd. Intact by ○	Temperature of blank or representative sample: At time of collection _____ °C At time of lab receipt <u>20.0</u> °C



ROGERS & CALLCOTT
LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29606
Phone: (864) 232-1556 - FAX: (864) 232-6140

Sample Receipt Verification

Client: Schlumberger Date Received: 5-17-12 Work Order: 2050501

Carrier Name: Client FedEx UPS US Mail Courier Field Services Other: _____

Tracking Number: _____

Receipt Criteria	Y e s	N o	N A	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples cooled? Temp at receipt recorded on COC Temp measured with IR thermometer - SN: 97050067	X			<u>Ice</u> Cold Packs Dry Ice None
Samples requiring pH preservation at proper pH? - Note: Samples for metals analysis may be preserved upon receipt in the lab.	X			

If in-house preservation used -- record Lot #	HCL	
	H ₂ SO ₄	
	HNO ₃	
	H ₃ PO ₄	
	NaOH	
	Other	

Comments:

Completed by: Norma Salley



Laboratory Services Report

Client	Schlumberger Technology Corp. - Sangamo-TMC Vic Cocianni 205 Industrial Blvd Sugar Land, TX 77478	Project:	Wastewater
		Work Order:	2050618
		Received:	05/22/2012 12:15

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on May 22, 2012. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Amy Ashley, your Project Manager, at amy.ashley@rogersandcallcott.com or (864)-335-4962 if you have any questions about this report.

CC: Cary, Kohler, Ketchum, Maalouf

Report Approved By:

Amy Ashley
Project Manager



Laboratory Services Report

South Carolina Laboratory Identification 23105
South Carolina Mobile Lab Identification 40572
North Carolina Laboratory Certification Number 27
NELAP Laboratory Identification E87822

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cocianni
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050618
Received: 05/22/2012 12:15

Sample Number	Sample Description	Matrix	Sampled	Type
2050618-01	Water Treatment Plant Effluent Discharge Grab	Wastewater	05/22/12 09:00	Grab
2050618-02	Water Treatment Plant Effluent Discharge Grab	Wastewater	05/22/12 09:00	Grab



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050618
Reported: 06/01/12 16:17

Sample Data

Sample Number 2050618-01
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 05/22/12 09:00

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Field Parameters									
pH	6.3	0.1	pH Units	1	05/22/12 09:00	SM 4500HB		LRW	B2E0625
Temperature	21.8	0.0	°C	1	05/22/12 09:00	SM 2550B		LRW	B2E0625

Sample Number 2050618-02
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 05/22/12 09:00

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
General Chemistry Parameters									
Total Suspended Solids	ND	2.0	mg/L	2	05/23/12 09:40	SM 2540D		LDS	B2E0647
PCBs									
PCB-1016	ND	0.50	ug/L	1	06/01/12 06:08	EPA 608		RKH	B2E0767
PCB-1221	ND	0.50	ug/L	1	06/01/12 06:08	EPA 608		RKH	B2E0767
PCB-1232	ND	0.50	ug/L	1	06/01/12 06:08	EPA 608		RKH	B2E0767
PCB-1242	ND	0.50	ug/L	1	06/01/12 06:08	EPA 608		RKH	B2E0767
PCB-1248	ND	0.50	ug/L	1	06/01/12 06:08	EPA 608		RKH	B2E0767
PCB-1254	ND	0.50	ug/L	1	06/01/12 06:08	EPA 608		RKH	B2E0767
PCB-1260	ND	0.50	ug/L	1	06/01/12 06:08	EPA 608		RKH	B2E0767
Surrogates									
					%REC	%REC Limits		Flag	
2,4,5,6-Tetrachloro-m-xylene				92	60-130				
Decachlorobiphenyl				99	30-150				



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050618
Reported: 06/01/12 16:17

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 608 Extraction				
EPA 608	B2E0767	2050618-02	05/29/2012 13:45	CGW



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050618
Reported: 06/01/12 16:17

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

NR Not reported



ROGERS & CALLCOTT LABORATORY SERVICES

P.O. Box 5656, Greenville, SC 29608
Phone (864) 232-1556 Fax (864) 232-6140
Shipping Address: 426 Fairforest Way
Greenville, SC 29607

CHAIN OF CUSTODY RECORD

2050616

PAGE 1 OF 1

Client Name: Schlumberger

Address: _____

Report To: _____

Telephone No. _____ FAX No. _____

PO No. _____ Project No. _____

Total Number of Containers	N/N					Filtered (Yes/No)
	Y/N					Cooled (Yes/No)
	P/G					Container Type (P/G)
	Z/2/2/4					Container Volume
	O/G					Sample Type (Grab/Composite)
	WW/NW					Sample Source (WW, GW, DW, Other)
	N/N					Sample Source Chlorinated (Yes/No)
	NA/NS					Lab. Receipt Ct. Check <u>MCW</u>
	NA/7					Lab Receipt pH Check <u>5-22-12</u>
	A/A					Preserved: (Code)

Preserved: (Code)
 A-None D-NaOH G-Boric Acid
 B-HNO E-HCL H-Ascorbic Acid
 C-H₂SO F-Na₂S₂O I-_____

COMMENTS

-01

pH 6.3 GRAB TAKEN
TEMPERATURE READ @ 0900
LOW STAIN BY R/C

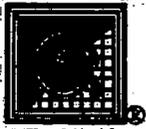
Rogers & Callcott Lab. No.	Yr/M Date	Time	Sample Description
	<u>5/22</u>	<u>0900</u>	<u>WATER TREATMENT PLANT EFF. DISCH.</u>

Total Number of Containers

PARAMETERS

TSS	PCB						
1	1						

SAMPLER Relinquished by (Sig.) <u>Royal Ward</u>	Date/Time <u>5/22/12 12:15</u>	Received by (Sig.) <u>[Signature]</u>	Date/Time <u>5-22-12 12:15</u>	KNOWN HAZARDS ASSOCIATED WITH SAMPLES
Relinquished by (Sig.) <u>[Signature]</u>	Date/Time	Received by (Sig.) <u>[Signature]</u>	Date/Time	
Relinquished by (Sig.) <u>[Signature]</u>	Date/Time	Received by (Sig.) <u>[Signature]</u>	Date/Time	
Seal # _____ at'chd by _____ Recvd. Intact by _____ Seal # _____ at'chd by _____ Recvd. Intact by _____				Temperature of blank or representative sample At time of collection _____ °C At time of lab receipt <u>4.5</u> °C



**ROGERS & CALLCOTT
LABORATORY SERVICES**

P.O. Box 5655, Greenville, SC 29606
Phone: (864) 232-1556 - FAX: (864) 232-6140

Sample Receipt Verification

Client: SCHLUMBERGER Date Received: 5.22.12 Work Order: 2050618

Carrier Name: Client FedEx UPS US Mail Courier Field Service Other: _____

Tracking Number: _____

Receipt Criteria	Y e s	N o	N A	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples cooled? <small>Temp at receipt recorded on COC Temp measured with IR thermometer - SN: 97050067</small>	X			<u>Ice</u> Cold Packs Dry Ice None
Samples requiring pH preservation at proper pH? <small>Note: Samples for metals analysis may be preserved upon receipt in the lab.</small>	X			

If in-house preservation used = record Lot #	HCL	
	H ₂ SO ₄	
	HNO ₃	
	H ₃ PO ₄	
	NaOH	
	Other	

Comments:

Completed by: KRU



Laboratory Services Report

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cocianni
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050750
Received: 05/29/2012 11:46

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on May 29, 2012. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

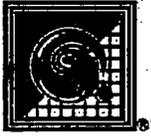
Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Amy Ashley, your Project Manager, at amy.ashley@rogersandcallcott.com or (864)-335-4962 if you have any questions about this report.

CC: Cary, Kohler, Ketchum, Maalouf

Report Approved By:

Amy Ashley
Project Manager



Laboratory Services Report

South Carolina Laboratory Identification 23105
South Carolina Mobile Lab Identification 40572
North Carolina Laboratory Certification Number 27
NELAP Laboratory Identification E87822

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cociami
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050750
Received: 05/29/2012 11:46

<u>Sample Number</u>	<u>Sample Description</u>	<u>Matrix</u>	<u>Sampled</u>	<u>Type</u>
2050750-01	Water Treatment Plant Effluent Discharge Grab	Wastewater	05/29/12 09:05	Grab
2050750-02	Water Treatment Plant Effluent Discharge Grab	Wastewater	05/29/12 09:05	Grab



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC 205 Industrial Blvd Sugar Land, TX 77478	Project: Wastewater Work Order: 2050750 Reported: 06/01/12 16:40
--	--

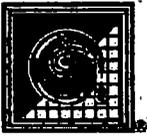
Sample Data

Sample Number 2050750-01
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 05/29/12 09:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Field Parameters									
pH	6.3	0.1	pH Units	1	05/29/12 09:05	SM 4500HB		LRW	B2E0779
Temperature	24.4	0.0	°C	1	05/29/12 09:05	SM 2550B		LRW	B2E0779

Sample Number 2050750-02
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 05/29/12 09:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
General Chemistry Parameters									
Total Suspended Solids	ND	2.0	mg/L	2	05/31/12 10:25	SM 2540D		LDS	B2E0805
PCBs									
PCB-1016	ND	0.50	ug/L	1	06/01/12 07:14	EPA 608		RKH	B2E0767
PCB-1221	ND	0.50	ug/L	1	06/01/12 07:14	EPA 608		RKH	B2E0767
PCB-1232	ND	0.50	ug/L	1	06/01/12 07:14	EPA 608		RKH	B2E0767
PCB-1242	ND	0.50	ug/L	1	06/01/12 07:14	EPA 608		RKH	B2E0767
PCB-1248	ND	0.50	ug/L	1	06/01/12 07:14	EPA 608		RKH	B2E0767
PCB-1254	ND	0.50	ug/L	1	06/01/12 07:14	EPA 608		RKH	B2E0767
PCB-1260	ND	0.50	ug/L	1	06/01/12 07:14	EPA 608		RKH	B2E0767
Surrogates									
				%REC	%REC Limits		Flag		
2,4,5,6-Tetrachloro-m-xylene				93	60-130				
Decachlorobiphenyl				92	30-150				



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050750
Reported: 06/01/12 16:40

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 608 Extraction EPA 608	B2E0767	2050750-02	05/29/2012 13:45	CGW



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050750
Reported: 06/01/12 16:40

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
NR Not reported



**ROGERS & CALLCOTT
LABORATORY SERVICES**

P.O. Box 5655, Greenville, SC 29606
Phone: (864) 232-1556 - FAX: (864) 232-6140

Sample Receipt Verification

Client: Schlumberger Date Received: 5-29-12 Work Order: 2050750

Carrier Name: Client FedEx UPS US Mail Courier Field Services Other: _____

Tracking Number: _____

Receipt Criteria	Y e s	N o	N A	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples cooled? Temp at receipt recorded on COC Temp measured with IR thermometer - SN: 97050067	X			<u>Ice</u> Cold Packs Dry Ice None
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab.	X			

If in-house preservation used - record Lot #	HCL	
	H ₂ SO ₄	
	HNO ₃	
	H ₃ PO ₄	
	NaOH	
	Other	

Comments:

Completed by: Dorinda Salley

ARCADIS

Attachment B

**Laboratory Services Report:
Whole Effluent Toxicity Testing**



Laboratory Services Report

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cocianni
205 Industrial Blvd
Sugar Land, TX 77478.

Project: Wastewater
Work Order: 2050601
Received: 05/22/2012 13:41

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on May 22, 2012. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Amy Ashley, your Project Manager, at amy.ashley@rogersandcallcott.com or (864)-335-4962 if you have any questions about this report.

CC: Cary, Kohler, Ketchum, Maalouf

Report Approved By:

Amy Z. Ashley

Amy Ashley
Project Manager



Laboratory Services Report

*South Carolina Laboratory Identification 23105
South Carolina Mobile Lab Identification 40572
North Carolina Laboratory Certification Number 27
NELAP Laboratory Identification E87822*

Client Schlumberger Technology Corp. - Sangamo-TMC
Vic Cocianni
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050601
Received: 05/22/2012 13:41

Sample Number	Sample Description	Matrix	Sampled	Type
2050601-01	Water Treatment Plant Effluent Discharge Grab	Wastewater	05/22/12 09:00	Grab



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050601
Reported: 05/30/12 09:50

Subcontracted Analyses

Sample Number 2050601-01
Sample Description Water Treatment Plant Effluent Discharge Grab collected on 05/22/12 09:00

Parameter

Subcontract Toxicity

These analyses were subcontracted to ETT Environmental. The subcontracted results are available at the end of the report.



**ROGERS & CALLCOTT
LABORATORY SERVICES**

Schlumberger Technology Corp. - Sangamo-TMC
205 Industrial Blvd
Sugar Land, TX 77478

Project: Wastewater
Work Order: 2050601
Reported: 05/30/12 09:50

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
NR Not reported

Ceriodaphnia dubia 48 Hour Acute Pass/Fail Test

EPA-821-R-02-012 Method 2002

Client: ROGERS & CALLCOTT

Facility: 12 Mile Creek Restoration Project

NPDES #: SC

Test Date:

22-May-12

Laboratory ID#: T39808

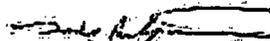
Rogers & Callcott ID: 2050601-01

Test Reviewed and Approved By:



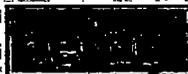
Robert W. Kelley, Ph.D.

QA/QC Officer



Farhad Rostampour

Laboratory Director



Certification #E87819

Test results presented in this report conform to all requirements of

NELAC, conducted under NELAC Certification Number E87819.

Florida Dept. of Health. Included results pertain only to provided samples.

SCDHEC Certification #23104

NCDENR Certification # 022



DMR Attachment for Pass/Fail Whole Effluent Toxicity Test Results

TWELVE MILE CREEK RESTORATION PROJECT Permit number SC

Discharge number

FINAL LIMITS: 04/01/2010-

Parameter TGA3B

MLOC=1. ATC=35.5% effluent

Monitoring period From	Year	Month	Day	To	Year	Month	Day
	12	5	01		12	5	31

Mortality Data - Acute and Chronic Tests

Reproduction Data - Chronic Tests Only

Date:	22-May-12	Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID:	23104	Control	20	0				
		Test	20	0	Pass			

Mortality Data - Acute and Chronic Tests

Reproduction Data - Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data - Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data - Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data - Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data - Chronic Tests Only

Date		Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Lab ID		Control						
		Test						

Signature of Principal Executive Officer or Authorized Agent _____
 Name/Title of Principal Executive Officer (typed or printed) _____
 DHEC 3420 (8/05)



ROGERS & CALLCOTT LABORATORY SERVICES

P.O. Box 5665, Greenville, SC 29608
Phone (864) 232-1558 Fax (864) 232-6140
Shipping Address: 426 Fairforest Way
Greenville, SC 29607

Client Name: ROGERS & CALLCOTT

Address: _____

Report To: _____

Telephone No. _____ FAX No. _____

PO. No: SCHLUMBERGER Project No: TWELVE MILE CREEK

CHAIN OF CUSTODY RECORD

PAGE 1 of 1

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Rogers & Callcott Lab No.	Yr/Date	Time	Sample Description
205	5/22	0900	WATER TREATMENT PLANT * EFF. DISCH

Total Number of Containers	PARAMETERS	A Acute Toxicity	N	Filtered (Yes/No)
			Y	Cooled (Yes/No)
			Y	Container Type (P/G)
			Y	Container Volume
			G	Sample Type (Grab/Composite)
			WW	Sample Source (WW, GW, DW, Other)
			N	Sample Source Chlorinated (Yes/No)
				Lab Receipt Cl. Check
				Lab Receipt pH Check
				Preserved: (Code)

Preserved: (Code)
A-None D-NaOH G-Boric Acid
B-HNO₃ E-HCL H-Ascorbic Acid
C-H₂SO₄ F-Na₂S₂O₅ I- _____

COMMENTS:

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SAMPLER Relinquished by (Sig.) ① <u>[Signature]</u>	Date/Time 5/22/12 1341	Received by (Sig.) ② <u>[Signature]</u>	Date/Time 5/22/12 1341	KNOWN HAZARDS ASSOCIATED WITH SAMPLES * DELIVERED TO ETT LAB	
	Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④		Date/Time
	Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥		Date/Time
Seal # _____ at chd by <input type="checkbox"/>	Recvd. Intact by <input type="checkbox"/>	Seal # _____ at chd by <input type="checkbox"/>	Recvd. Intact by <input type="checkbox"/>	Temperature of blank or representative sample At time of collection _____ °C At time of lab receipt <u>1.6</u> °C	

Attachment 3

Second Quarter Construction Photo Log



View of vegetation growth on the SMU top tier.



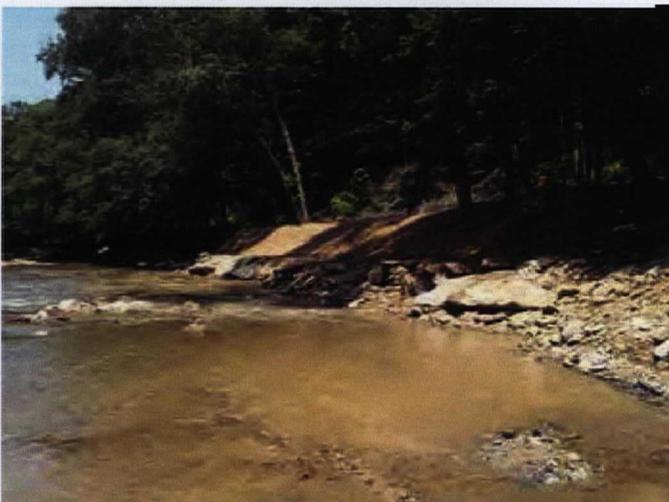
View of vegetation growth on the SMU middle tier.



View of vegetation growth at the former water treatment plant area as viewed from the SMU.



View of Ball property restoration efforts.



View of Ball property restoration looking downstream.



View of Ball property restoration looking upstream.